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v.7.05

# A Parent's Guide to MATHEMATICS GRADE LEVEL CONTENT EXPECTATIONS

WHAT YOUR CHILD NEEDS  
TO KNOW BY THE END OF  
**KINDERGARTEN**



## **A Parent Guide to Grade Level Content Expectations**

### **Michigan Sets High Academic Standards –for ALL**

This booklet is a part of Michigan’s Mathematics and English Language Arts Grade Level Content Expectations (GLCE). It is just one in a series of tools available for schools and families. The Michigan Department of Education (MDE) provides similar booklets for families of children in kindergarten through eighth grade.

Teacher versions of the Grade Level Content Expectations are finished for grades Kindergarten through eight. They state in clear and measurable terms what students in each grade are expected to know and be able to do. They also guide the design of the state’s grade level MEAP tests required in the No Child Left Behind Act (NCLB) legislation.

Educators and classroom teachers from Michigan school districts have been involved in the development and/or review of Michigan’s GLCE. The expectations were designed to ensure that students receive seamless instruction, from one grade to the next, leaving no gaps in any child’s education. More importantly, they set high expectations in literacy and mathematics so we can better prepare all K-12 students for the challenges they will face in a global 21<sup>st</sup> century.

To learn more about the Michigan Curriculum Framework, visit [www.michigan.gov/mde](http://www.michigan.gov/mde) and click on **“K-12 Curriculum.”**

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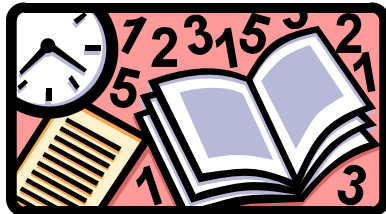
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**Kindergarten Mathematics** is the science of patterns and relationships. It is the language and logic of our technological world. Mathematical power is the ability to explore, to imagine, to reason logically and to use a variety of mathematical methods to solve problems - all important tools for children's futures. A mathematically powerful person should be able to:

- reason mathematically
- communicate mathematically
- solve problems using mathematics
- make connections within mathematics and between mathematics and other fields



#### Michigan's **Mathematics Grade Level Content**

**Expectations** (GLCE) are organized into five strands:

- Number and Operations
- Algebra
- Geometry
- Measurement
- Data and Probability

The big ideas for Kindergarten children are in the area of **numbers**. The GLCE at Kindergarten emphasize counting, grouping, and ordering numbers. Teachers will talk about what numbers mean, what they are called, and about the patterns in numbers.

#### **Glossary Terms**

Words that have asterisks (\*) are defined in the Glossary located in the back of this booklet.

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***By the end of Kindergarten, your child should know and be able to do the following:***

## **Numbers and Operations**

### **Count, Write, and Order Numbers**

- ☐ Count, using whole numbers and recognize how many objects are in sets up to 30.
- ☐ Count objects using one number for each item.
- ☐ Put in order sets of up to 30 objects and compare using such phrases as 'same number', "more than", or "less than".
- ☐ Read and write numerals to 30 and match them to the same number of objects.
- ☐ Count orally to 100 by ones. Count to 30 by 2s, 5s and 10s.



### **Compose and Decompose Numbers (\*)**

- ☐ Understand that the numbers to 30 can contain groups of ten plus some ones. Also use objects to count by tens to 100.
- ☐ Put together and take apart numbers that total up to 10.  
Example: Describe and make drawings to represent  $5 = 4 + 1$   
 $5 = 2 + 3$
- ☐ Learn number sense. Example: 6 is 1 more than 5, 7 is one more than 6.
- ☐ Count objects using fingers and or objects.

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## Add and Subtract Numbers

- ☐ Record mathematical things by writing simple addition and subtraction sentences. Example:  $7+2=9$   $8-5=3$

## Explore Number Patterns (\*)

- ☐ Create, describe, and extend simple number patterns.  
Example: 1, 2, \_\_, 4, 5, \_\_, 7

## Measurement

### Explore Concepts of Time

- ☐ Know and use the common words for the parts of the day (morning, afternoon, evening, night).
- ☐ Know the common words for relative time (yesterday, today, tomorrow, last week, next year).
- ☐ Name tools that measure time. (clocks measure hours and minutes; calendars measure days, weeks, and months)
- ☐ Name times when daily activities occur to the nearest hour: lunchtime is at 12 o'clock; bedtime is 8 o'clock.

### Explore Other Measurement Attributes

- ☐ Compare two or more objects by length, weight and capacity.
  - Which object is shorter, longer, heavier, lighter?
  - Which container holds more or less water?

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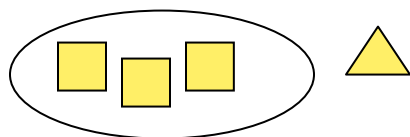
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## Geometry

### Create, Explore, and Describe Shapes

- ❑ Relate familiar three-dimensional objects inside and outside the classroom to their geometric name.  
Example: ball to sphere      dice to cubes  
             soup can to cylinder      ice cream cone to a cone
- ❑ Name, sort, and group objects by attributes (\*) and identify objects that do not belong in a particular group.  
Example: The squares belong in the group. Why doesn't the triangle belong in the group?



#### Ways to Praise Your Child

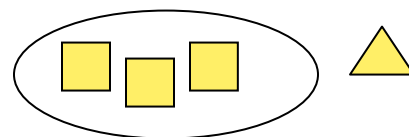
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**attributes** - words that describe an object; characteristics like size, shape, color, etc.

**compose numbers** - to put a set of numbers together to make new numbers using addition or multiplication.  
Example:  $3+9=12$  or  $4 \times 3 = 12$

**decompose numbers** - to break up numbers into parts.  
Example:  $8=3+5$  or  $10=2 \times 5$

**patterns** - things that repeat



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